

AMENDMENTS TO THE CLAIMS

1. (canceled)

2. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said step of transmitting said first group directory is performed using a REMADE protocol, wherein said first group directory and said second group ~~directory~~ directories comprise data items that are divided into blocks that include a block sequence number, a data item identifier, and a timestamp indicating an age of a respective data item.

3. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said step of transmitting said first group directory is performed by periodic transmission thereof.

4. (canceled)

5. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said step of transmitting said first group directory is performed according to a policy of said content provider.

6. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said step of transmitting said second group directory is performed by periodic transmission thereof.

7. (canceled)

8. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said step of transmitting said second group directory is performed using a REMADE protocol, wherein said first group directory and said second group ~~directory~~ directories comprise data items that are divided into blocks that include a block sequence number, a data item identifier, and a timestamp indicating an age of a respective data item.

9. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said step of transmitting said second group ~~directory~~ directories is performed according to a policy of said content provider.

10. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said content provider comprises a plurality of content providers.

11. (canceled)

12. (currently amended) The method according to ~~claim 11~~ claim 49, wherein said first cache and said subsidiary caches are linked together as a hierarchical tree, said first cache forming a root of said hierarchical tree.

13. (canceled)

14. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said first group directory comprises a root directory hierarchically linked to a plurality of subdirectories, said subdirectories carrying a list of data items, a subtree of said first group directory being defined by one of said subdirectories and at least one linked subdirectory thereunder.

15. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said second group ~~directory~~ directories comprises a root directory hierarchically linked to a plurality of subdirectories, said subdirectories carrying a list of data items, a subtree of said second group directory being defined by one of said subdirectories and at least one linked subdirectory thereunder.

16. (canceled)

17. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said step of transmitting said first group directory is performed using a REMADE protocol, wherein said first group directory and said second group ~~directory~~ directories comprise data items that are divided into blocks that include a block sequence number, a data item identifier, and a timestamp indicating an age of a respective data item.

18. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said step of transmitting said first group directory is performed by periodic transmission thereof.

19. (canceled)

20. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said step of transmitting said first group directory is performed according to a policy of said content provider.

21. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said step of transmitting said second group ~~directory~~ directories is performed by periodic transmission thereof.

22. (canceled)

23. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said step of transmitting said second group directory is performed using a REMADE protocol, wherein said first group directory and said second group ~~directory~~ directories comprise data items that are divided into blocks that include a block sequence number, a data item identifier, and a timestamp indicating an age of a respective data item.

24. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said step of transmitting said second group ~~directory~~ directories is performed according to a policy of said content provider.

25. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said content provider comprises a plurality of content providers.

26. (canceled)

27. (canceled)

28. (currently amended) The computer software product according to ~~claim 26~~ claim 51, wherein said cache and said subsidiary caches are linked together as a hierarchical tree, said cache forming a root of said hierarchical tree.

29. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said first group directory comprises a root directory hierarchically linked to a plurality of subdirectories, said subdirectories carrying a list of data items, a subtree of said first group directory being defined by one of said subdirectories and at least one linked subdirectory thereunder.

30. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said second group ~~directory~~ directories comprises a root directory hierarchically linked to a plurality of subdirectories, said subdirectories carrying a list of data items, a subtree of said second group directory being defined by one of said subdirectories and at least one linked subdirectory thereunder.

31. (canceled)

32. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said first group directory is transmitted using a REMADE protocol, wherein said first group directory and said second group ~~directory~~ directories comprise data items that are divided into blocks that include a block sequence number, a data item identifier, and a timestamp indicating an age of a respective data item.

33. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said first group directory is transmitted periodically.

34. (canceled).

35. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said first group directory is transmitted according to a policy of said content provider.

36. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said second group ~~directory~~ directories ~~is~~ are transmitted periodically.

37. (canceled)

38. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said second group directory is transmitted using a REMADE protocol, wherein said first group directory and said second group ~~directory~~ directories comprise data items that are divided into blocks that include a block sequence number, a data item identifier, and a timestamp indicating an age of a respective data item.

39. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said second group ~~directory~~ directories ~~is~~ are transmitted according to a policy of said content provider.

40. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said content provider comprises a plurality of content providers.

41. (canceled).

42. (currently amended) The system according to ~~claim 41~~ claim 53, wherein said cache and said subsidiary caches are linked together as a hierarchical tree, said cache forming a root of said hierarchical tree.

43. (canceled)

44. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said first group directory comprises a root directory hierarchically linked to a plurality of subdirectories, said subdirectories carrying a list of data items, a subtree of said first group directory being defined by one of said subdirectories and at least one linked subdirectory thereunder.

45. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said second group ~~directory~~ directories comprises a root directory hierarchically linked to a plurality of subdirectories, said subdirectories carrying a list of data items, a subtree of said second group directory being defined by one of said subdirectories and at least one linked subdirectory thereunder.

46. (currently amended) The method according to ~~claim 1~~ claim 49, wherein said step of transmitting said first group directory is performed without receiving communications from any receivers of said content.

47. (currently amended) The computer software product according to ~~claim 16~~ claim 51, wherein said step of transmitting said first group directory is performed without receiving communications from any receivers of said content.

48. (currently amended) The system according to ~~claim 31~~ claim 53, wherein said first server is operative to transmit said first group directory to said subsidiary cache without receiving communications from any receivers of said content.

49. (new) A method of transmitting data over a communications network, comprising:

receiving content from a content provider in a first cache;

responsively to receipt of said content establishing a first group directory in said first cache;

multicasting said first group directory from said first cache over said communications network to a plurality of subsidiary caches, while flagging said content so as to require said subsidiary caches to begin receiving said content immediately without waiting for transmission requests from clients, and without using a return link from the subsidiary caches to the first cache;

establishing second group directories in said subsidiary caches, said second group directories being derived from said first group directory; and

transmitting said second group directories from said subsidiary caches to a multicast group of receivers.

50. (new) The method according to claim 49, wherein multicasting said first group directory comprises periodically retransmitting said first group directory, so as to enable said subsidiary caches to recover from errors in transmission without returning messages to said first cache.

51. (new) A computer software product, comprising a computer-readable medium in which computer program instructions are stored, which instructions, when read by at least one computer, causes said at least one computer to execute a method of transmitting data over a communications network, comprising the steps of:

receiving content from a content provider in a first cache;

responsively to receipt of said content establishing a first group directory in said first cache;

multicasting said first group directory from said first cache over said communications network to a plurality of subsidiary caches, while flagging said content so as to require said subsidiary caches to begin receiving said content immediately without waiting for transmission requests from clients, and without using a return link from the subsidiary caches to the first cache;

establishing second group directories in said subsidiary caches, said second group directories being derived from said first group directory; and

transmitting said second group directories from said subsidiary caches to a multicast group of receivers.

52. (new) The computer software product according to claim 51, wherein multicasting said first group directory comprises periodically retransmitting said first group directory, so as to enable said subsidiary caches to recover from errors in transmission without returning messages to said first cache.

53. (new) A system for transmitting data over a communications network, comprising:
a first server, having a cache therein, receiving content from a content provider, wherein responsive to said content a first group directory is established in said cache by said first server; and

a plurality of second servers, having respective subsidiary caches therein,
wherein said first server is arranged to multicast said first group directory from said first cache over said communications network to said subsidiary caches, while flagging said content so as to require said subsidiary caches to begin receiving said content immediately without waiting for transmission requests from clients, and without using a return link from the subsidiary caches to the first cache, and

wherein responsive to said first group directory, second group directories are established in said subsidiary caches by said second servers, and said second group

directories are transmitted by said second servers from said subsidiary caches to a multicast group of receivers.

54. (new) The system according to claim 53, wherein said first server is arranged to periodically retransmit said first group directory, so as to enable said subsidiary caches to recover from errors in transmission without returning messages to said first cache.